May 7, 2007

Dr. Robert J. Sawyer
Chairman
California Air Resources Board
1001 I Street
Sacramento, CA 95812

RE: Recommendations for Early Action Measures

Recommendation: Reduction of greenhouse gas emissions from California livestock operations and synthetic fertilizer use.

Dear Chairman Sawyer;

CEERT, Sierra Club, Steven and Michele Kirsch Foundation and Center on Race, Poverty & the Environment thanks the Air Resources Board for the opportunity to comment on the determination of the state's Early Action Measures to reduce the state's global warming emissions.

We understand that the ARB is only considering pursuing the issue of greenhouse gas emissions from livestock operations — especially dairies — as part of Table 2 measures (those for which it has been deemed that there is insufficient time for rules to be promulgated before January 1, 2010.) We also understand that there are many research efforts underway in the state to develop a comprehensive understanding of the impacts of livestock operations. This work should not only be directed towards developing a thorough understanding of the ecological dynamics of the livestock system, it should extend to how various state policies work to incentivize certain practices on livestock operations, while disincentivizing others.

State policies should be examined for the role they may play in encouraging livestock operations to become larger and more concentrated while the mitigation of their environmental impacts remains difficult. The state should ensure that the pursuit of the increased use of anaerobic digesters on livestock operations as a general policy approach does not exacerbate the already significant environmental challenge posed by certain livestock operations in the state.

For example, much of the focus on the role that livestock operations play in global warming has been directed towards the reduction of methane emissions, without necessarily appreciating the role that reactive nitrogen can play in livestock GHG emissions. It has been known for some time that agricultural lands can be an important source of NOx emissions including N_2O, and manures can play an important role in these emissions.* Recent research, based on approaches employing remote sensing, suggests that earlier work using regional and global models to extrapolate NOx emissions by integrating data from local experiments/measurements — employing a "bottom-up" approach — may have underestimated NOx emissions by as much as half. Emissions are highest where application of fertilizer (including animal manures) to land is most intense. The state should ensure that its latest ground-based research and modelling is linked/calibrated with current measures employing remote sensing.

State agencies should seek to understand the implications of the proposed deployment of anaerobic digesters to reduce the GHG emissions from livestock operations would mean for the GHG balance of the livestock farm as a system. This would be to ensure that in seeking to

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* The IPCC WGIII's *Summary Report for Policy Makers*, and other research as part of the International Nitrogen Intitiative, indicates that agricultural sources are responsible for the bulk of the increase in global N_2O emissions in recent decades.

reduce methane emissions that a livestock farm with an anaerobic digester does not inadvertently increase overall GHG emissions by increasing N_2O emissions associated with the subsequent handling and application of the digested manure to farmland.

The increasingly wide-spread use of ionophores in California dairies should also be investigated for the implications of the use of these compounds on overall GHG emissions from the dairy farm system and for the deployment of digesters.

Finally, in keeping with the IPCC WGIII's recommendations measures should be pursued to improve nitrogen fertilizer application techniques to reduce N_2O emissions from agricultural soils.

CEERT, Sierra Club, Steven and Michele Kirsch Foundation and Center on Race, Poverty & the Environment would like to see all relevant state agencies develop a set of comprehensive policies that could immediately address the impacts of livestock operations and the widespread use of synthetic fertilizers on climate, air and water quality, community and environmental health. CEERT, Sierra Club, Steven and Michele Kirsch Foundation and Center on Race, Poverty & the Environment recommends that in order for the ARB and CAT agencies to be able to expeditiously develop policies that can inform related rulemaking — sooner rather than later — that funding and agency efforts be directed with all due haste to resolve the challenge posed by nutrient pollutants that influence global warming emissions from the state's agricultural industry.

Sincerely,

John Shears
Center for Energy Efficiency
and Renewable Technologies

Paul Mason
Sierra Club California

Susan Frank
Steven and Michele Kirsch Foundation

Avinash Kar
Center on Race, Poverty
& the Environment

C: Linda Adams, Secretary, Cal-EPA

Senator Don Perata, President Pro Tempore California Senate

Speaker Fabian Nunez